

Claims

- [c1] Having thus described the preferred embodiment, the invention is now claimed to be:
- 1 .A light emitting device, comprising:
a nitride compound, for providing at least one of blue and ultraviolet emission;
an epoxy, embedded with a phosphor, mounted to the nitride compound; and
a frame including a surface having an uneven portion contacting the epoxy.
- [c2] 2 .The light emitting device as set forth in claim 1 , wherein the compound includes one of binary compound materials, ternary compound materials, and quaternary compound materials.
- [c3] 3 .The light emitting device as set forth in claim 2 , wherein the nitride compound is one of a group II through group VI–nitride compound.
- [c4] 4 .The light emitting device as set forth in claim 3 , wherein the nitride compound is a group III–nitride including GaN.
- [c5] 5 .The light emitting device as set forth in claim 1 , further including:
a substrate, the nitride compound and the epoxy being mounted to the substrate.
- [c6] 6 .The light emitting device as set forth in claim 5 , wherein the substrate includes sapphire.
- [c7] 7 .The light emitting device as set forth in claim 1 , wherein the uneven portion is a designed surface.
- [c8] 8 .The light emitting device as set forth in claim 1 , wherein the phosphor converts the at least one of the blue and the ultraviolet emission from the nitride compound to a visible light, which is emitted from the frame.
- [c9] 9 .The light emitting device as set forth in claim 1 , wherein the frame further includes a smooth portion, substantially none of the phosphor embedded epoxy contacting the smooth portion.
- [c10] 10 .A system for converting light from a first range of wavelengths to a second range of wavelengths, comprising:
a semiconductor;

a phosphor embedded epoxy contacting a first end of the semiconductor; and
a frame contacting the phosphor embedded epoxy.

[c11] 11. The system for converting light from a first range of wavelengths to a second range of wavelengths as set forth in claim 10, wherein:
the first range of wavelengths includes blue/ultraviolet light; and
the second range of wavelengths includes visible light.

[c12] 12. The system for converting light from a first range of wavelengths to a second range of wavelengths as set forth in claim 10, wherein:
the first range of wavelengths is greater than about 10 nanometers and less than about 500 nanometers; and
the second range of wavelengths is greater than about 400 nanometers and less than about 800 nanometers.

[c13] 13. The system for converting light from a first range of wavelengths to a second range of wavelengths as set forth in claim 10, wherein the semiconductor includes:
a substrate;
a nitride compound, for providing at least one of blue and ultraviolet emission, mounted on a first end of the substrate, the phosphor embedded epoxy being mounted on a second end of the substrate.

[c14] 14. The system for converting light from a first range of wavelengths to a second range of wavelengths as set forth in claim 13, wherein the nitride compound includes one of binary compound materials, ternary compound materials, and quaternary compound materials.

[c15] 15. The system for converting light from a first range of wavelengths to a second range of wavelengths as set forth in claim 13, wherein the substrate is sapphire.

[c16] 16. The system for converting light from a first range of wavelengths to a second range of wavelengths as set forth in claim 10, wherein the frame includes a designed surface, substantially all of the phosphor embedded epoxy contacting the designed surface.

[c17] 17. A method of manufacturing a solid state lamp, comprising:
mounting a phosphor embedded epoxy to a first end of a semiconductor including a

nitride, which provides at least one of blue and ultraviolet emission; and mounting the first end of the semiconductor to a frame via the phosphor embedded epoxy.

[c18] 18. The method of manufacturing a solid state lamp as set forth in claim 17, further including:
creating a designed surface on the frame, the second end of the semiconductor being mounted to the designed surface.

[c19] 19. The method of manufacturing a solid state lamp as set forth in claim 17, further including:
attaching an electrical contact to the semiconductor die.

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